NEW Lifetime Warranty

Commitment to Quality

For full coverage of your warranty, be sure to register your product using the enclosed registration card.

A Network Systems Solution
UNICOM™

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City of Industry, CA 91748 U.S.A.
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Rev: 04.05

Vision series

A Network Systems Solution
UNICOM™

1000Base-T to 1000Base-SX/LX Gigabit Ethernet Converter

GEP-5001TF-C	1000Base-T/SX (SC/MM/220,500m)
GEP-5101TF-C	1000Base-T/LX (SC/SM/10Km)

USER'S MANUAL

Package Contents

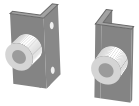
Package contents include the following:

- 1000Base-T to 1000Base-SX/LX Converter (MM or SM)
- DC Power Adapter
- Rack Mount Brackets
- User's Manual
- Warranty card (not shown)

Gigabit Converter Converter
(Multi-Mode or Single Mode)

User's Manual

Power Adapter



Rack Mount Brackets

IMPORTANT: If any piece is missing or damaged, please contact your local dealer or reseller for service.

For Your Records

Product Name: _____

_____

Serial Number: _____

Date of Purchase: _____

Purchased from: _____

Notes: _____

_____

_____

FCC Statement

This equipment has been tested and found to comply with the limits for a class B device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with instructions, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case, the user will be required to correct the interference at the user's expense.

LED Indicators:	*Power,* *UTP (1000Mbps, LK/Act, FDX/COL),* *Fiber (LK/Act, FDX/COL)*
Power:	*Stand-alone (external adapter): 9V DC / 0.7A*
EMI:	*FCC Class A, CE, UL, CUL*
Enclosure:	*Metal*
Dimensions:	*4.75"(L) x 3.4"(W) x .96"(H)* *119mm x 85mm x 26mm*
Warranty:	*Limited Lifetime*

Introduction

Congratulations on purchasing a quality UNICOM product.

Unicom's *VELOCITY Series* represents the newest, most advanced generation of signal conversion technology. The Gigabit Fiber Converter Module is a cost-effective solution for the conversion of 1000Base-T to 1000Base-SX/LX cabling and can be used in Unicom's 10 bay media chassis or as stand-alone component.

The Gigabit Fiber Converter Module extends the cabling distance of your 1000Base-T network up to 550m with Multi-mode or 10Km with Single Mode fiber optic cabling. The Gigabit Fiber Converter provides the most popular fiber cabling connection: the SC connector. The Gigabit Fiber Converter features one fiber connector for fiber optic cable and one Ethernet RJ-45 port (Auto MDI/MDIX) for 1000Base-T copper cable connections. DIP-switches on the converter configure the operation modes for UTP, Fiber ports, and the link loss forwarding function.

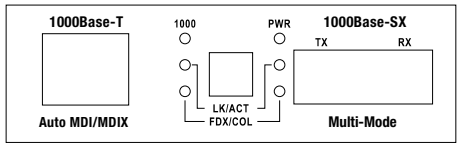
Key Features

- Complies with IEEE 802.3, 802.3u, and 802.3x, IEEE 802.3ab 1000Base-T, IEEE 802.3z 1000Base-SX/LX standard
- Converts between UTP cabling and Fiber optic cabling.
- One RJ-45 connector supports 1000Mbps for UTP port
- One fiber connector (SC/MM or SC/SM) for 1000Base-SX/LX.
- Fiber cabling connectivity up to 10Km.
- DIP-Switches set the operation mode and Link-Lost-Forwarding function.
- LEDs. Per port: 1000, Link, Activity, Full, Collision
  Per Unit: Power
- External DC power adapter 9V/0.7A.
- FCC Class A, CE, UL, and CUL Mark certification
- Can be mounted in chassis or used as stand-alone

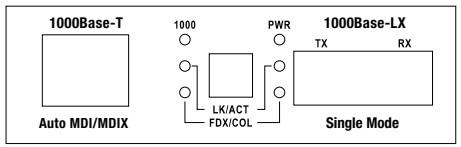
Hardware Description

The Front Panel

The Front Panel of the 1000T/SX/LX converters consists of one RJ-45 Port (Auto MDI/MDIX), Six LED Indicators (1000, LK/ACT, FDX, Fiber LK/ACT, and PWR) and one fiber 1000Base-SX/LX Port.



Multi-mode



Single Mode

Ports

- **RJ-45 Port** (Auto MDI/MDIX): the Ethernet RJ-45 features a 1000Base-T connection and Auto MDI/MDIX which is basically an auto crossover feature. This means you can connect to another Switch or workstation without changing to a crossover cable.
- **Fiber Port:** This port is for the 1000Base-SX/LX connection and is available in either the Multi-Mode SC or Single Mode SC format.

Optical Fiber Spec

The following table shows the optical fiber specification:

	Multi-mode	Single Mode
Wavelength:	850 nm	1310 nm
Fiber Size:	62.5/125µ, 50/125µ	8/125µ, 9/125µ
Output Optical:	Min.-9.5, Max.-4 (dBm)	Min.-9.5, Max.-3 (dBm)
Stressed Receiver Sensitivity:	Max. -13.5 dBm Avg.	Max. -14.4 dBm Avg.
Max. Fiber Distance:	62.5/125µ, 220m 50/125µ, 550m	10Km

Product Specifications

Standard Compliance: *IEEE 802.3ab 1000Base-T*
IEEE 802.3z 1000Base-SX/LX standard
IEEE802.3x Flow Control and Back pressure

Connectors: *Fiber: SC/SC (Multi-mode and Single Mode)*
RJ-45 Port: Cat5e/6 (1000Mbps) Twisted Pair cable, Auto MDI/MDIX and Auto-Negotiation Function Support

Fiber Parameters *Fiber Core and Distance:*
MM: 62.5/125µm, 220m
50/125µm, 550m
SM: 8/125µm, 9/125µm, 10Km
Wavelength: 850nm/MM, 1310nm/SM

Transparent Packet: *64 to 1536 Bytes for Ethernet packets*

Link Loss Forwarding: *UTP - Fiber: If UTP link is down then converter will force fiber link down.*

Fiber - UTP: If Fiber link is down then converter will force UTP link down

DIP Switch: *DIP-Switch 1: UTP - Fiber LLF Enable/Disable*
DIP-Switch 2: Fiber - UTP LLF Enable/Disable

Cabling

- Use four-pair UTP Category 5e or 6 cabling for RJ-45 port connections. The cable between the converter and the link partner (switch, hub, workstation, etc.) must be less than 100 meters (328 ft.) long.
- The Single Mode segment must use 8/125 or 9/125μm Single Mode fiber cable. Maximum distance between two devices using the SM fiber link is 10 Kilometers in full duplex operation. For half-duplex operation, the recommended maximum distance is 412 meters (1352 ft.).
- The Multi-Mode Fiber segment must use 50 or 62.5/125μm Multi-Mode fiber cable. Maximum distance between two devices using the Fiber link is 220m with 62.5/125 fiber and 550m with 50/125.

Troubleshooting

- Verify that you are using the correct power adapter (DC 9V, 0.7A). Do not use a power adapter with DC output greater than 9V as converter damage may occur.
- Check the configuration DIP-switch. It must be configured in the same operation mode as its link partner.
- Verify that you are using the correct cable.
- Do not combine Multi-Mode and Single Mode devices.

LED Indicators

There are six diagnostic LEDs located on the front panel of the converter. They provide real-time information of system and optional status. The following table provides descriptions of the LED status.

LED	Status	Color	Description
PWR	On	Green	• The converter is supplied with suitable power.
1000	On	Green	• Current UTP Speed is 1000 Mbps
LK/ACT (UTP)	On Blinking Off	Green - -	• Unit is connected with a link • Unit is transmitting/receiving data • No device attached
LK/ACT (Fiber)	On Blinking Off	Green - -	• Unit is connected with a fiber link • Unit is transmitting/receiving data • No device attached
FDX/COL (UTP)	On Blinking Off	Orange - -	• The UTP port is in full-duplex mode. • Packet Collisions occurring in the port. • Half-duplex mode/no device attached

DIP Switch Description

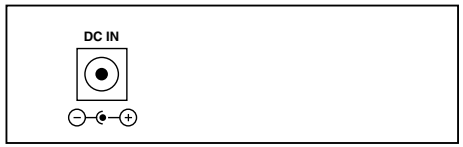
S/W	Status	Description
1	ON	UTP LLF Enable
	OFF	UTP LLF Disable
2	ON	Fiber LLF Enable
	OFF	Fiber LLF Disable

The DIP-Switch is used to configure operation mode for LLF (Link Lost Forwarding) and operation mode for the UTP/Fiber ports. The default value of the dipswitch is OFF.

Link Lost Forwarding: When LLF is enabled, UTP link failures are reported to the fiber side and Fiber link failures are reported to the UTP side. Therefore, A link loss forward feature is provided for both UTP and Fiber operations.
[Note] Do not change the DIP-switch settings when the UTP or fiber ports are transmitting or receiving data. This may cause data errors.

Rear Panel

The rear panel contains a power socket. This power socket accepts DC 9V voltage and minimum 700mA supplied current.



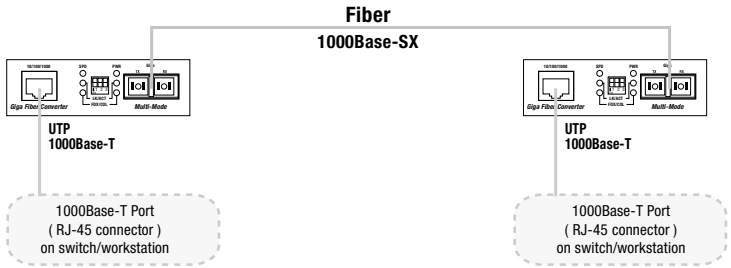
Network Connection

A. Select the appropriate length Category 5e or 6 twisted pair cable. Connect one end of the twisted pair cable to the RJ-45 connector on the converter and the other end of twisted pair cable to the RJ-45 connector on any 1000Base-T device.

B. Connect one end of a fiber jumper to the SC connector on this converter and the other end of the fiber jumper to the SC connector on the other 1000Base-SX/LX device.

C. Attach the power adapter DC jack to the converter. Verify that the Power LED is on.

D. Verify that the UTP “LK/ACT” LEDs light when cable connection is installed correctly. Verify that Fiber “LK/ACT” LED blinks to indicate network activity.

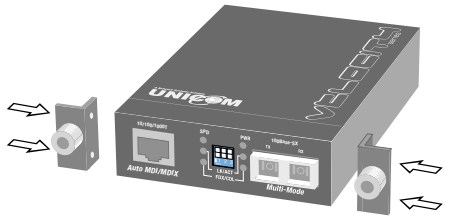


Installing Converters into Chassis

Follow the steps below to install modular converters into the 10 space Converter Chassis (pn: FEP-593110).

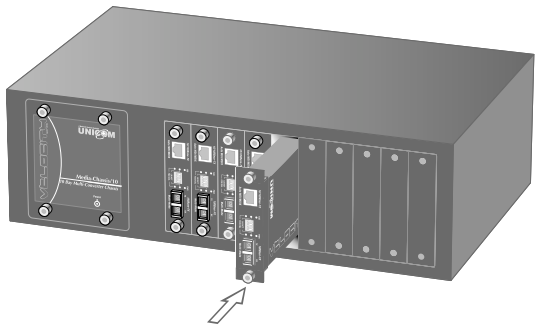
A. Remove the blank bracket from the chassis by rotating screw counterclockwise. Put the blank bracket aside.

B. Open the rack mount bracket kit. The kit contains two rack mount brackets and four screws.



C. Use a screwdriver to attach the rack mount ears to both sides of the modular converter.

D. Install the modular converter by inserting it into the chassis guides and sliding it in until it stops. Press it firmly to seat the chassis power plug into the modular converter receptacle.



E. Gently push the thumbscrews in and turn clockwise to tighten. *Do not over tighten.*